REMARKS

Claims 1-3, 10 and 11, which are pending in the application, stand rejected under 35 USC 112, first and second paragraphs. Claims 4-9 and 12-21 are cancelled. Claims 1-3 stand further rejected under 35 USC 103(a) and 35 USC 102(e) or (b) as being unpatentable over Coffindaffer et al. (US 6,335,312). Claims 1-3 stand furthermore rejected under 35 USC 102(b) over Scalia.

Rejections under 35 USC 112, second paragraph

Claims 1-3 10 and 11 stand rejected under 35 USC 112, second paragraph as indefinite. The rejection should be withdrawn in view of the remarks below.

The Office Action alleges that:

> Claim 1 does not define the individual esters in the mixture. For a claim to be directed to a mixture, it needs to state the members of said mixture. Formula 1 does not exist since sulfur may not contain more than 6 bonds. If one reads the definitions of the variables, a mixture of esters of formula 1 encompasses a large variety of esters which are well known to exist, and which are not described in the specification.
>
> If one reacts the mixture *of* the three alcohols with sulfuryl chloride ,one forms the product where a+b+c=3. The claimed formula states that a+b+c=2. Accordingly, all three *of* R1, R2 and R3 may not be present in the claimed product. Additionally since a,b or c may be 2, only one *of* R1 ,R2 or R3 need be present. Applicant may state that the reactants as claimed in the process limitation will produce the claimed mixture. However, those reactants will produce a mixture *of* many esters as detailed above.
>
> The structure *of* claim 1 contains a sulfur atom with 7 bonds, which is not a known state for sulfur. The examiner suggests that applicant write the claim by including all *of* the structures for the individual esters in the mixture. (Office Action, page 2 para 4 to page 3, para 2).

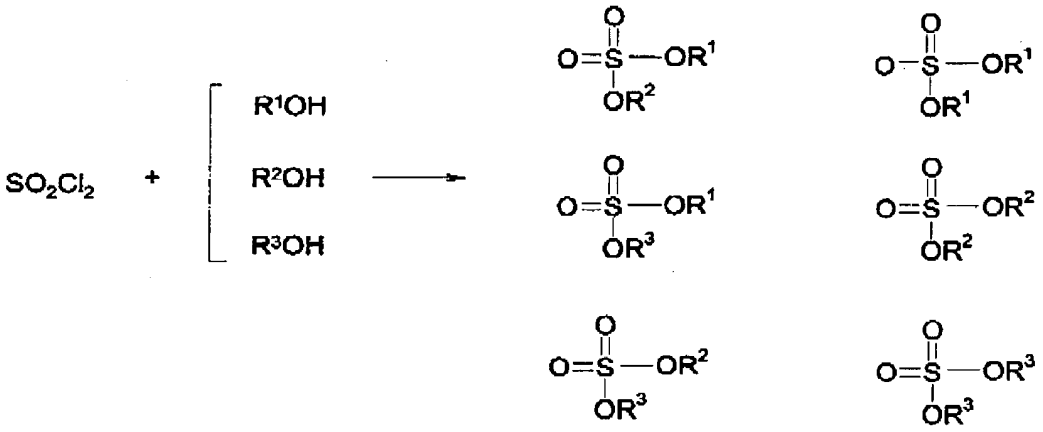
The sulfur in formula 1 may never contain seven bonds. Further, there is no contradiction among "the proviso that a+b+c = 2," of the Claim 1, and complying with the six bonds possible for sulfur and that three different alcohols are used in the esterification. The presence of three alcohols as starting materials during the esterification does not imply that all three alcohols are present in a sulphate

molecule (AND not possible because, at maximum, two ester chains per sulphate molecule).

In particular, the Examiner alleged that "many" compounds might arise and that renders the claim indefinite. However sulphuryl chloride is always reacted with the three different mentioned alcohols R^1OH, R^2OH and R^3OH, and **six** different compounds may be formed (See the reaction scheme below). A "mixture" includes at least two compounds, however, the "mixture" may include, at maximum, all six compounds.

Some of the compounds of OR^1 OR^2 or OR^3 may be known as <u>single</u> compound. (i.e. the lower esters with OR^1). However, the present invention does not claim any single compound. Rather, Applicants' invention is related to the entire <u>mixture</u> that results from the esterification. And, Claim 1 includes that the esterification is carried out "with a mixture of the alcohols R^1OH, R^2OH and R^3OH" or three alcohols,

For example, the reaction scheme of the esterification is as follows:



Thus, Claim 1 defines the individual esters in the mixture and the claimed mixture. Accordingly, Claim 1 is definite. Reconsideration is requested.

Claims 1-3 and 10-11 stand rejected under 35 U.S.C. 112, first paragraph, as

containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The rejection should be withdrawn in view of the remarks below.

> The Office Action alleges that:
> The description in the specification, including example 1, describes a process *of* forming a mixture *of* sulfuric acid esters wherein R1, R2 and R3 all are present, which is different from the mixture claimed wherein a+ b + C =2, meaning that not all three possible R groups are present on each individual ester in the mixture. Accordingly, since the claimed a, band c are each 0,1 or 2 (note integers are claimed) there is no description of forming the product as claimed wherein in each ester in the mixture, a + b +c =2. Since a, band c are all present in the reaction mixture, none is equal to zero, resulting in the sulfur atom in at least some of the resultant claimed esters having at least 7 bonds, since there is no provision in the mixture as claimed for the ester wherein the R groups may be a fractional number. The mixture as claimed also provides for mixtures of esters wherein one of the R groups may be 2 and the others zero. For example, there may be two different R1 groups, and none of either R2 or R3. That mixture is not ruled out by the process limitation, and is not enabled by the specification (Office Action, page 3, para 4 to page 4, para 1).

As discussed above, the sulphuryl chloride is always reacted with the three different mentioned alcohols R^1OH, R^2OH and R^3OH, and **six** different compounds may be formed (See the reaction scheme above). A "mixture" includes at least two compounds, however, the "mixture" may include, at maximum, all six compounds.

Further, as discussed, some of the compounds of OR^1 OR^2 or OR^3 may be known as <u>single</u> compound. (i.e. the lower esters with OR^1). However, the present invention does not claim any single compound. Rather, Applicants' invention is related to the entire <u>mixture</u> that results from the esterification. And, Claim 1 includes that the esterification is carried out "with a mixture of the alcohols R^1OH, R^2OH and R^3OH" or three alcohols. For example, Applicants' invention may include that the "three alcohols R^1OH, R^2OH, and R^3OH can be used in the following quantity ratio

R^1OH 10 to 40 (preferably 30 to 40) mol%

R^2OH 20 to 80 (preferably 30 to 40) mol%, and

R^3OH 10 to 40 (preferably 30 to 40) mol%,

the amounts of the three alcohols always totaling 100 mol%" (Specification, page 7, lines 12 to 17). Thus, one skilled in the art could read the claims in light of the specification and practice Applicants' invention. Reconsideration is requested.

Rejections under 35 USC 102 (b) or (e) and Rejection under 35 USC 103(a)

Claims 1-3 stand rejected under 35 USC 102(b) and (e) as anticipated by and under 35 USC 103(a) as unpatentable over Coffindaffer et al. These rejections should be withdrawn in view of the remarks below.

1. Rejections under 35 USC 102 (b) or (e)

The Office Action alleges that:

> Coffindaffer et al. discloses the production of mixtures of sulfuric esters from mixtures of C12 and C13 aliphatic alcohols and also the mixture of alkyl ethoxy sulfates having ethoxylation in the range of 5-9 moles of ethoxylation. (col 23 lines 38-47) In col 23, the production of the claimed mixtures of sulfuric esters where a=2, and b and c are each equal zero, and R1 is a mixture of aliphatic radicals having 1 to 30 carbon atoms is taught. Beginning in column 23 line 63, a mixture of C12 and C13 alcohols are sulfated, forming a mixture of sulfuric esters wherein one R1 is equal to an aliphatic radical having 12 carbons and the second R1 is a radical having 13 carbon atoms. Next Coffindaffer et al. discloses sulfating mixtures of C12 and C13 alcohol ethoxylate (col 24 lines 37 et seq.) The product is then a mixture of two sulfuric esters in which a and c are both 1 and b is zero. In the first ester, R1 is C12 and R 3 is ethylene oxide where p is an integer of 5 to 9 and in the second ester R1 is C13 and R3 is an integer of 5 to 9. Accordingly, Coffindaffer et al. discloses several mixtures within the scope of the claimed sulfuric ester mixtures as claimed when a+b+c=2 (Office Action, page 6, first para).

In Example II, Coffindaffer et al discloses the preparation of a sulphate having two OR chains with R being a C12/13 alcohol or an C14/15 (column 23, line 63 to column 24, line 21 and column 24, line 64 to column 25, line 37). However, this is not a mixture as in the present invention, but exactly one of the above mentioned components. Thus, Coffindaffer et al does not disclose Applicants' invention.

In Example II, Coffindaffer et al further discloses the preparation of a sulphate having two OR chains with R being an ethoxylated C12/C13 alcohol or an ethoxylated C14/15 alcohol the side chains, in fact similar to the ester chains disclosed by Scalia. However, this is not a mixture, but one component of the six mentioned above, and thus does not teach or suggest Applicants' invention. Reconsideration is requested.

2. Rejection under 35 USC 103

The Office Action alleges that:
Coffindaffer et al discloses the production of mixtures of sulfuric esters from mixtures of C12 and C13 aliphatic alcohols and also the mixture of alkyl ethoxy sulfates having ethoxylation in the range of 5-9 moles of ethoxylation. (col 23 lines 38-47) In col 23, the production of the claimed mixtures of sulfuric esters where a=2, and band c are each equal zero, and R1 is a mixture of aliphatic radicals having 1 to 30 carbon atoms is taught. Beginning in column 23 line 63, a mixture of C12 and C13 alcohols are sulfated, forming a mixture of sulfuric esters wherein one R1 is equal to an aliphatic radical having 12 carbons and the second R1 is a radical having 13 carbon atoms. Next Coffindaffer et al. discloses sulfating mixtures of C12 and C13 alcohol ethoxylate (col 24 lines 37 et seq.) The product is then a mixture of two sulfuric esters in which a and c are both 1 and b is zero. In the first ester, R1 is C12 and R 3 is ethylene oxide where p is an integer of 5 to 9 and in the second ester R1 is C13 and R3 is an integer of 5 to 9.

Coffindaffer et al. differs from the claimed subject matter because the mixtures of esters. are not made by the process as claimed. However, the process as claimed does not produce the claimed subject matter since it results in a product wherein a+b+c=3, and in the claimed mixture a+b+c=2 (Office Action, page 4 para 3, to page 5, para 1).

However, Coffindaffer et al does not teach or suggest Applicants' invention, as discussed above. There is no teaching or suggestion to modify Coffindaffer et al to arrive at Applicants' invention. Further, Coffindaffer et al relates to a completely

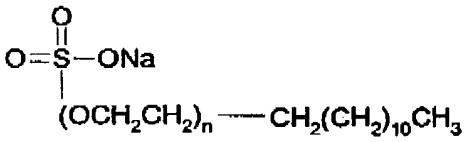
different field of endeavor than Applicants' invention, i.e. personal cleansing compositions. Thus, one skilled in the art would have never taken into consideration compositions nor modified such compositions used in as personal cleansing compositions in order to improve compositions to be used as leveling agents for treating textiles. Reconsideration is requested.

Rejection under 35 USC 102

Claims 1-3 stand rejected under 35 USC 102(b) as anticipated by Scalia. These rejections should be withdrawn in view of the remarks below.

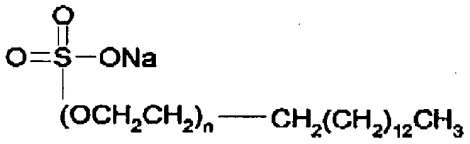
> The Office Action alleges that:
> Scalia disclosed the mixture of sodium laureth sulphate and myreth sulfate. See Table 1 on page 869. In the first compound, R1is C12 and in the second R1 is C14. In both compounds, R3 is an ethylene oxide polymer. The examiner notes that Scalia discloses the sodium salts of said esters (Office Action, page 7, lines 1-3).

Scalia discloses a mixture of different sulphate esters, however, both are of the type $SO_2(OR^1)_2$. Such a mixture does anticipate Applicants' invention. For example, Table 1 discloses a mixture of a) sodium laureth sulphate that is (see footnote " * " below Table 1 in Scalia):

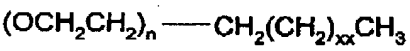


and

b) sodium myreth sulphate which is (using the same nomenclature as given by Scalia):



In Applicants' invention none of the three alcohols has a substituent R of the formula:



(see Applicants' R1-3). Additionally the sulphates of Applicants' invention include two "ester chains" in each molecule, whereas Scalia teaches that "ONa" is required. Thus, Scalia does not each each and every element of Applicants' invention. Reconsideration is requested.

In view of the foregoing, Applicant submits that the record does not support a prima facie case of unpatentability. Applicants therefore pray for allowance of the claims in the application.

Respectfully submitted,

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